5

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,244	10/13/2003	William Carl Anderson	13DV-13568-3	3014

7590 06/03/2004

John S. Beulick
Armstrong Teasdale LLP
Suite 2600
One Metropolitan Square
St. Louis, MO 63102

EXAMINER
KIM, TAE JUN

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/684,244	**Applicant(s)** ANDERSON, WILLIAM CARL
	Examiner Ted Kim	**Art Unit** 3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 10/13/2003.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 6-20 is/are pending in the application.
4a) Of the above claim(s) 6-12 is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) 13-20 is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification of in an application. It is requested that applicant's reference be updated to include the issued patent.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 6-12, drawn to a receptacle, classified in class 470, subclass 18.

II. Claims 13-20, drawn to a gas turbine thrust link, classified in class 60, subclass 797.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination is directed to a thrust link where the each of the openings of the thrust link comprise a plurality of threads whereas the subcombination further requires a first thread portion which as the reduced stress portion, the combination, at least in its broadest sense can be operated without a first thread portion and could be configured with a reduction of stresses anywhere in the threaded region not just in a first thread portion. The subcombination

has separate utility such as use for any fastening apparatus, such as a nut, whereas the combination has the threads specifically in the opening of the thrust link.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Robert Reeser III on May 26, 2004 a provisional election was made with traverse to prosecute the invention of group II, claims 13-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6-12 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

6. Claims 16, 18, 19, 20 are objected to because of the following informalities: they lack a verb. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al (6,357,220) in view of either Corrette (4,408,418) or Fredd (4,117,563). Snyder et al teach a gas turbine engine comprising a thrust link 64 (note that link 64 will take on the thrust loads

from the casing, alternately note that the link is a thrust link can be deemed a matter of intended use as there is no structure in the claims to differentiate the link from being a thrust link as opposed to any other type of link) comprising a first connector 79, a second connector connecting to 68, and a span section 64 extending therebetween, each said thrust link connector comprising a first side, a second side, and an opening (e.g. in 78) extending therebetween and defined by an inner surface, said inner surface comprising a plurality of threads (col. 4, lines 7+) extending radially outward into said connector opening. Snyder et al do not teach said plurality of threads comprising a cutback configured to reduce stresses induced into said plurality of threads. Corette teaches plurality of threads in 12 comprising a cutback (either 13 or 19) configured to reduce stresses induced into said plurality of threads; each said connector opening has a center axis of symmetry extending from said connector first side to said connector second side, said cutback oblique with respect to said center axis of symmetry; said plurality of threads comprise a first thread portion (either 13 or 19), each said thread comprises a crest and a root, said cutback extending through said first thread portion crest; said connector first thread portion adjacent at least one of said connector first side and said connector second side; said connector cutback comprises a first end (14 or 21) and a second end (16 or 18), said cutback first end extending through said connector first thread portion, said cutback second end (16 or 18) between said connector first thread portion and said connector second sides; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback first distance longer than said connector cutback second distance; said connector cutback further configured to reduce a stiffness factor of at least a portion of said plurality of threads. Fredd teaches a plurality of threads comprising a cutback (T) configured to reduce stresses induced into said plurality of threads; each said connector opening has a center axis of symmetry extending from said connector first side to said connector second side, said cutback oblique with respect to said center axis of symmetry; said plurality of threads comprise a first thread portion (T), each said thread comprises a crest and a root, said cutback extending through said first thread portion crest; said connector first thread portion adjacent at least one of said connector first side and said connector second side; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback first distance longer than said connector cutback second distance; said connector cutback further configured to reduce a stiffness factor of at least a portion of said plurality of threads. It would have been obvious to one of ordinary skill in the art to employ a cutback, as taught by either Corette or Fredd, to enhance the threaded connection of Snyder et al.

9. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al (6,357,220) in view of either Bonstein (5,014,411) or Sugimura (4,958,973). Snyder et al teach a gas turbine engine comprising a thrust link 64 (note that link 64 will take on the thrust

loads from the casing, alternately note that the link is a thrust link can be deemed a matter of intended use as there is no structure in the claims to differentiate the link from being a thrust link as opposed to any other type of link) comprising a first connector 79, a second connector connecting to 68, and a span section 64 extending therebetween, each said thrust link connector comprising a first side, a second side, and an opening (e.g. in 78) extending therebetween and defined by an inner surface, said inner surface comprising a plurality of threads (col. 4, lines 7+) extending radially outward into said connector opening. Snyder et al do not teach said plurality of threads comprising a cutback configured to reduce stresses induced into said plurality of threads. Bonstein teaches a plurality of threads comprising a cutback 16 configured to reduce stresses induced into said plurality of threads; each said connector opening has a center axis of symmetry extending from said connector first side 12 to said connector second side 16, said cutback oblique with respect to said center axis of symmetry; said plurality of threads comprise a first thread portion, each said thread comprises a crest and a root, said cutback extending through said first thread portion crest; said connector first thread portion adjacent at least one of said connector first side and said connector second side; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback first distance longer than said connector cutback second distance due to the taper outward from 16 to 12; said connector cutback further configured to reduce a stiffness factor of at least a portion of said plurality of threads. Sugimura teaches plurality of threads (see col. 3, lines 41+) comprising a cutback (F1-F7) configured to reduce stresses induced into said plurality of threads; each said connector opening has a center axis of symmetry C extending from said connector first side to said connector second side, said cutback (see line 22) oblique with respect to said center axis of symmetry C; said plurality of threads comprise a first thread portion (F1-F7), each said thread comprises a crest and a root, said cutback extending through said first thread portion crest; said connector first thread portion adjacent at least one of said connector first side and said connector second side; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback comprises a first end and a second end, said cutback first end extending through said connector first thread portion, said cutback second end between said connector first thread portion and said connector second sides; said connector cutback first distance longer than said connector cutback second distance; said connector cutback further configured to reduce a stiffness factor of at least a portion of said plurality of threads. It would have been obvious to one of ordinary skill in the art to employ a plurality of threads with a cutback, as taught by either Bonstein or Sugimura, to enhance the threaded connection of Snyder et al.

10. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nash (4,571,936) in view of Snyder et al (6,357,220) in view of any of Corrette (4,408,418), Fredd

(4,117,563), Bonstein (5,014,411) and Sugimura (4,958,973). Nash teach a gas turbine engine comprising a thrust link 200 (see col. 4, lines 32-38) where the link must absorb thrust loads, comprising a first connector 202, a second connector 204, and a span section extending therebetween, each said thrust link connector comprising a first side, a second side, and an opening extending 230, 232 therebetween and defined by an inner surface to receive threaded fastening members (col. 5, lines 19+). It is not clear whether the inner surface is threaded. Snyder et al is applied as a teaching reference to show that it is old and well known to thread the inner surface of the fastening members of such mounting links (col. 4, lines 7+). It would have been obvious to one of ordinary skill in the art to make the inner surface threaded, as an old and well known type of connection used for links in gas turbine engines. Nash does not teach said plurality of threads comprising a cutback configured to reduce stresses induced into said plurality of threads. Corette, Fredd, Bonstein and Sugimura all teach connector openings with the claimed threaded connections, and for conciseness, their teachings are referred to above. It would have been obvious to one of ordinary skill in the art to employ the claimed cutbacks, as taught by any of Corette, Fredd, Bonstein and Sugimura, in order to facilitate an enhanced threaded connection.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 703-308-2631. The

Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 703-872-9306 for Regular faxes and 703-872-9306 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu, can be reached on 703-308-2675.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861.

General inquiries can also be directed to Technology Center Customer Service Office at 703-306-5648 or the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at

http://www.uspto.gov/main/patents.htm

Ted Kim	Telephone	703-308-2631
Primary Examiner	Fax (Regular)	703-872-9306
May 28, 2004	Fax (After Final)	703-872-9306
Technology Center 3700 Receptionist	Telephone	703-308-0861
Technology Center 3700 Customer Service	Telephone	703-306-5648
Patents Assistance Center	Telephone	800-786-9199